

Minor Notices.

MR. H. J. WEBBER has published an Appendix to the Catalogue of the Flora of Nebraska. The flora of this very interesting state is being vigorously investigated, and as the somewhat arbitrary line between the eastern and western manuals runs through it, such a list as this appendix contains unusually affects their contents. The appendix adds 432 species to the original catalogue, and the recorded Nebraska flora now contains 48 protophytes, 115 zygophytes, 27 oöphytes, 808 carpophytes, 60 bryophytes, 19 pteridophytes, and 1245 phanerogams; in all 2322 species.

THE 23d Contribution from the Herbarium of Columbia College is entitled "The American Species of the Genus *Anemone* and the Genera which have been referred to it," by N. L. Britton. In this paper Dr. Britton reviews the various notions as to generic limitations, and casts in the weight of his authority against consolidation, regarding *Anemone* and *Pulsatilla* as worthy of being considered distinct genera. *Hepatica* and *Anemonella* are also kept distinct, the latter bearing the older generic name *Syndesmon* Hoffmg. In addition to these genera which are represented from North America, the other American genera, *Capethia* and *Barneoudia*, are considered. *Pulsatilla*, thus revived, contains two species, the old *Anemone patens*, var. *Nuttalliana*, appearing as *P. hirsutissima* (Pursh). *Anemone*, thus delimited, is credited with 28 species, 9 of which are confined to South America. Two new species of the United States are *A. Tetonensis* Porter, of Idaho, and *A. Lyallii* Britton, of the northwestern Pacific region.

NOTES AND NEWS.

A PRELIMINARY LIST of the mosses of Lancaster County, Penn., has been published by John K. Small of Lancaster, and enumerates 150 species.

MR. F. W. DEWART has been appointed general assistant in botany at the Missouri Botanical Garden *vice* Mr. Hitchcock, who has gone to Manhattan, Kans. His duties began March 1.

THE FEBRUARY NUMBER OF AGRICULTURAL SCIENCE contains two botanical articles: "Notes on the flora of Thunderhead Mountain, Tennessee," by T. H. Kearney, Jr., and "Some recent contributions to mycology," by F. L. Scribner.

PRESIDENT JOHN M. COULTER is lecturing to large University Extension classes in Evansville and New Albany, Indiana, and Louisville, Ky. Each course includes twelve lectures upon the general morphology and physiology of plants.

IN ADDITION to continuations of articles already noted, the March number of the *Forstlich-naturwissenschaftliche Zeitschrift* contains the beginning of a paper on the "Influence of living and dead soil covering on the temperature of the soil," by Professor Dr. Ebermayer of Munich.

IT IS ALWAYS interesting to follow the track of rare plants, and some articles concerning the proper home of Calypso, were lately published in the GAZETTE. It seems, however, that it is also quite at home in Europe, as Mr. H. Samzelius happened to find not less than 400 flowering specimens in a birch-forest near Tornio river in the Tornio-Lapmark last June.¹—T. H.

A COMMITTEE of prominent botanists has undertaken to remove Stephan Endlicher's body from its unmarked grave in the Matzleinsdorfer Cemetery near Vienna, to the new Central Cemetery, and to provide a suitable monument to the memory of this distinguished botanist and philologist. Contributions may be sent to the k. k. zoologisch-botanische Gesellschaft, Wien 1, Herrengasse 13.

MR. F. W. ANDERSON'S valuable mycological collections have been donated to Columbia College, New York. He was associated at his death with Dr. and Mrs. N. L. Britton, and his collection being in their care was donated to that institution. His large herbarium of phanerogams is now in the possession of Rev. F. D. Kelsey undergoing revision, and when this is finished it is donated by Rev. Joseph Anderson to Deer Lodge College, Montana, as a memorial of his son.

ALIDA OLBERS has investigated the structure of the pericarp of the Labiatae.² The investigation shows that the structure of the pericarp in the Labiatae is very uniform, although the author has succeeded in finding several differences. These structural differences do not correspond, however, to the systematic position of the genera in which they have been observed; the same group may show different types, while the same type may occur in several and mutually different groups.—T. H.

DR. M. C. COOKE, the editor of *Grevillea*, announces that with the issue of the next number (June) the twentieth volume and the series will come to an end. His fickle health and increasing years render necessary his withdrawal from the editorship. Whether the journal will be continued in other hands or whether it will come to an end remains an open question. We hope that if it is continued it will cease to be a "species mill" and become an English journal with somewhat the scope and standing of *Hedwigia* and other cryptogamic periodicals.

THE SOUTHERN TOMATO BLIGHT is treated by Dr. Byron D. Halsted in bulletin No. 19 of the Mississippi Agric. Exper. Station. This is the first time the disease has been critically studied, although it appears to have been known for some time, and to be of considerable commercial importance. Prof. Halsted decides that it is of bacterial

¹Botaniska Notiser, 1891, p. 174.

²Bihang till Kgl. Sv. Vetensk. Akad. Hdlgr., Vol. xvi, part iii, Stockholm, 1891, 20 pp., 2 plates.

nature, and identical with a blight of potatoes. He also inclines to think that it is caused by the same microbe that produces the disease in melons, an account of which was given in the preceding volume of this journal, p. 303.

CROSSING VARIETIES OF CORN has been conducted at the experiment station of Kansas since 1888. The results obtained in 1891 are given in bulletin No. 27, by Prof. W. A. Kellerman. The general conclusions which Prof. Kellerman draws from the whole series of experiments are "that the characters of so-called distinct varieties of corn can, by means of cross-fertilization, be made to blend more or less completely," and that the "blended form, or 'cross,' so far as our experiments indicate, does not generally (if kept free from contamination by foreign pollen), revert perceptibly to the parental types."

MACARONI AS A SOLID MEDIUM upon which to cultivate bacteria is advocated by Prof. G. de Lagerheim, (*Centr. f. Bak. u. Par.*, XI, 147). The sticks are cut into pieces about $4\frac{1}{2}$ cm. long, placed in test tubes, enough water added to cover them, and then boiled about fifteen minutes, or until well swollen and white. The water is now poured off, the tubes closed with cotton plugs, and steam-sterilized in the usual way, when they are ready to use. It is intended to take the place of potato in a measure, as more convenient and satisfactory, and also to add another culture medium for diagnostic purposes, as some bacteria have already been found that will grow upon potato but not upon macaroni.

AT THE REQUEST of Baron Ferd. von Mueller in Melbourne, Baron Otto Nordstedt has undertaken the work of writing a monograph of the Australasian Characeæ, the first part of which has lately been issued by R. Friedländer & Sohn, of Berlin. References are given to preceding papers, which deal with the same subject. Allen's "Characeæ of America" is especially commended for the study of the anatomy and morphology of these plants. Of the ten species, described in the first part, following are new: *Nitella partita*, *N. tumida* and *Chara Leptopitys* A. Br. subsp., *subebracteata*. The paper is accompanied by ten plates illustrating the plants in natural size, accompanied by numerous enlarged details.—T. H.

THE PRESENT SYSTEMATIC arrangement of the phæosporic algæ is not satisfactory. A valuable contribution in regard to the correct understanding of several species heretofore referred to *Adenocystis* has been given by Prof. Kjellmann.¹ He revises the following species: *A. (Lessoni* var.?) *Californica* Rupr., *A. Lessoni* Harv., *A. Durvillaei*? Herb. Holm. in sched. and *A. Durvillaei* (Bory) et auct. The result of his examination is that these really represent four different genera, belonging to four families namely: *Adenocystis* Hook. fil. et Harv. of the family LAMINARIACEÆ; *Coilodesme* Strömf., by Strömfelt referred to CHORDARIACEÆ; *Corycus* n. gen. of PUNCTARIACEÆ; and finally a yet undescribed genus of the family SCYTOSIPHONACEÆ.—T. H.

¹KJELLMANN, F. R.: Undersökning af naagra till slägtet *Adenocystis* Hook. fil. et Harv. hänföörda alger. (A study of some Algæ, which have been referred to *Adenocystis* by Hooker fil. and Harvey.) Bihang till Kgl. Sv. Vetensk. Akad. Hdlgr., vol. XV, Part III, Stockholm, 1890.

TWO NEW SPECIES of red mycoderma are described and figured by A. Lasché in *Der Braumeister* for March (v. 278). These belong to the class of plants usually called yeasts, but in reviewing the literature he points out that no true colored yeasts, i. e. spore-producing *Saccharomyces*, have yet been described. The more interesting of the new species is *Mycoderma Humuli*, found upon the leaves of the hop, *Humulus Lupulus*. It has the marked characteristic of producing new cells by first forming a promycelium, instead of budding directly. The other species was found by accident in making plate cultures, and so came from the air. It is named *M. rubrum*, and shows some tendency toward the occasional formation of promycelium.

AT THE LAST MEETING of the Chamisso Botanical Club, of Berkeley, Cal., one of the members enumerated ninety-eight species of phanerogamic plants in flower in January. The number, though considered quite large, was not the result of systematic investigation but only those casually noticed in flower about Berkeley and on two excursions to the opposite side of the bay. The limits of the list are within ten miles of San Francisco. It is noteworthy that a large proportion are introduced plants which here find congenial conditions, or species of extensive or nearly world-wide range. Professor Greene called attention to the manner of leaf propagation discovered in *Cardamine Californica*, a method known only in two other Californian plants and in few others elsewhere. Other members read papers of local botanical interest.—W. L. JEPSON.

UNTIL QUITE recently it has been assumed that the growth of the mistletoe was necessarily prejudicial to the tree upon which it grows. With the discovery of "symbiosis," or that arrangement whereby two plants live in intimate association one with the other without injury to either, but perhaps with reciprocal advantage, a different view has been taken, and an apple tree is supposed to be advantageous to the mistletoe growing on it in summer, while in winter the evergreen *Viscum* supplies the deficiency which the apple experiences by the loss of its leaves. M. Gaston Bonnier has been putting the matter to the proof by estimating comparatively the changes which occur in the composition of the two plants and of the atmosphere during growth. For half the year it is found that the mistletoe assimilates food by its green leaves for the denuded apple tree. We cannot give the details of M. Bonnier's experiments, but it is sufficient to say that they completely bear out the idea of perfect "symbiosis," or mutual adaptation, and that save by mechanical obstruction, the mistletoe does no harm to the tree on which it is growing.—*Gard. Chron.* Jan. 23. How is this conclusion borne out by our common American mistletoe?

PROFESSOR G. DE LAGERHEIM, director of the botanical garden at Quito (Ecuador), announces the discovery of European Uredineæ near Quito.¹ He has observed *Puccinia coronata* upon plants of an *Avena*, the seeds of which had been introduced from Europe; which is the more interesting since none of the species of *Rhamnus*, upon which the corresponding æcidium lives, have been found yet in Ecuador.

¹Botaniska Notiser, Lund 1891, p. 63.

The only explanation of this peculiar fact seems to be that the germinating oats were infected with teleutospores of *P. coronata*, and that both the æcidium and the uredo-generation were passed. According to Plowright,² who succeeded in infecting young plants of wheat with sporidia of *Puccinia graminis*, the æcidium generation may be passed, and Prof. Lagerheim supposes the same to be the fact with *P. coronata* in Quito. He has also found *P. graminis* near Quito, where it occurred on some varieties of *Avena*, although none of the species of *Berberis*, nor even *Mahonia Aquifolium*, which usually are bearers of its æcidium generation, exist in Ecuador. He is therefore inclined to explain the occurrence of *Puccinia graminis* in the same way as that of *P. coronata*.—T. H.

MM. DEWEVRE AND BORDAGE propose in the February number of the *Revue général de Botanique* a method of analyzing and recording the movements of plants photographically. Instead of the interrupted observations as in the method used by Darwin and later investigators, they succeed in getting a continuous record. The difference is the difference between the occasional observations with an auxanometer and the record obtained by the registering instruments. The plants to be observed are placed in a dark box whose sides are pierced by apertures for the fronts of two cameras, one vertical and the other horizontal. To the tip of the organ to be studied is affixed a spherule of wax which furnishes the bright point whose movement makes the tracing on the sensitive plates. In case it is desired to avoid the alterations produced by darkness the plant and cameras are similarly arranged, uncovered. The dark background for the bright point is secured by placing opposite the cameras long tubes of proper diameter whose inner surfaces are blackened. In both cases the pot needs to be supported so that it can be lowered as growth occurs. The method is certainly a very ingenious one, and capable of valuable service. For the details and necessary cautions we must refer to the paper itself.

IN ORDER THAT the exhibition of weeds at the World's Columbian Exposition may be large, and representative of all sections of the country, Dr. Byron D. Halsted, of the N. J. Experiment Station, New Brunswick, N. J., (having this feature in charge) asks for specimens of the worst weeds from all states and territories. It is suggested that each botanist or local collector, who may be pleased to assist in the work, secure at least three specimens each of the worst weeds in his state or section. In making the specimens it is important that collectors obtain seeds, seedlings in various stages of development, the root system, the flower and flower cluster, and the seed vessels. It may be necessary, therefore, to secure these various essentials at different times during the coming season. If the weed is a large one stress is laid upon the procuring of specimens while they are small enough so that the whole plant, roots and all, can be mounted, without bending, upon a herbarium sheet of ordinary size, that is, not over a foot in length. Persons who will aid Dr. Halsted should signify their intention, and allotments will then be made according to the locality. It is hoped that each state in the Union may be represented by specimens in this national exhibit of our worst weeds. The collecting must all be done during the present season, and the specimens sent in for mounting, labeling, etc., by December 1st.

²The connection of wheat mildew with the barberry æcidium; Records of the Woolhope Transactions, 1887.